HELIX
Environmental Planning

Carlsbad Raceway

Preserve Management Plan

October 30, 2013

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1.0 INTRODUCTION

1.1 PURPOSE FOR INCLUSION OF THE PRESERVE AREA IN THE HMP

The purpose of this Preserve Management Plan (PMP) is to provide long-term management, monitoring, and reporting consistent with the Conservation Easement (CE) between Fenton Raceway, LLC and the City of Carlsbad (March 5, 2007). The Carlsbad Raceway Preserve is a component of the San Diego County's Multiple Habitat Conservation Program (MHCP; AMEC and CBI 2003), Carlsbad Open Space Management Plan (OSMP; TAIC 2004), and the Habitat Management Plan for the Natural Communities in the City of Carlsbad (HMP; City of Carlsbad 2004), and the management of the preserve will be consistent with each of those plans. The preserve is to be managed for the purpose of protecting and preserving the quality of the habitat and sensitive resources and to meet the applicant's obligations under the CE, the Mitigated Negative Declaration (MND; City of Carlsbad 2001a and 2001b) and the Biological Opinion (BO; 1-6-02-F-2124) for the Carlsbad Raceway project issued by the U.S. Fish and Wildlife Service (USFWS; 2003).

1.2 PRESERVE AREA HISTORY

The Carlsbad Raceway site had been used for various automobile and off-road motorcycle racing events from 1964 through 2004. A drag strip stretched across two-thirds of the site, from the northeast corner to the south central area within the canyon bottom. In addition, some of the southwestern portion of the site had been used for agriculture in the past. Construction of the Carlsbad Raceway Business Park project adjacent to the preserve area began in 2004.

1.3 PURPOSE OF THIS MANAGEMENT PLAN

The purpose of this PMP is to:

- Meet the requirements for environmental documentation to comply with applicable state and federal statutes and regulations;
- Identify required personnel qualifications for implementing management goals and objectives;
- Serve as a budget planning aid for annual budget preparation;
- Provide an overview of the preserve's management goals and objectives, as well as specific directives for the protection and management of native habitats and wildlife as required by the CE;
- Summarize existing data on the native habitats, plants, and wildlife that occur on or use this property; and
- Outline appropriate public uses of the preserve and its resources.

The San Diego Habitat Conservancy (SDHC), working cooperatively with the Fenton Raceway Business Park Property Owners Association, will be the Preserve Manager for the preserve. The contact information for SDHC is:

San Diego Habitat Conservancy
2770 Historic Decatur Road, Suite 205
San Diego, CA 92106
619-365-4839
www.sdhabitat.org

2.0 PRESERVE AREA DESCRIPTION

2.1 GEOGRAPHICAL SETTING

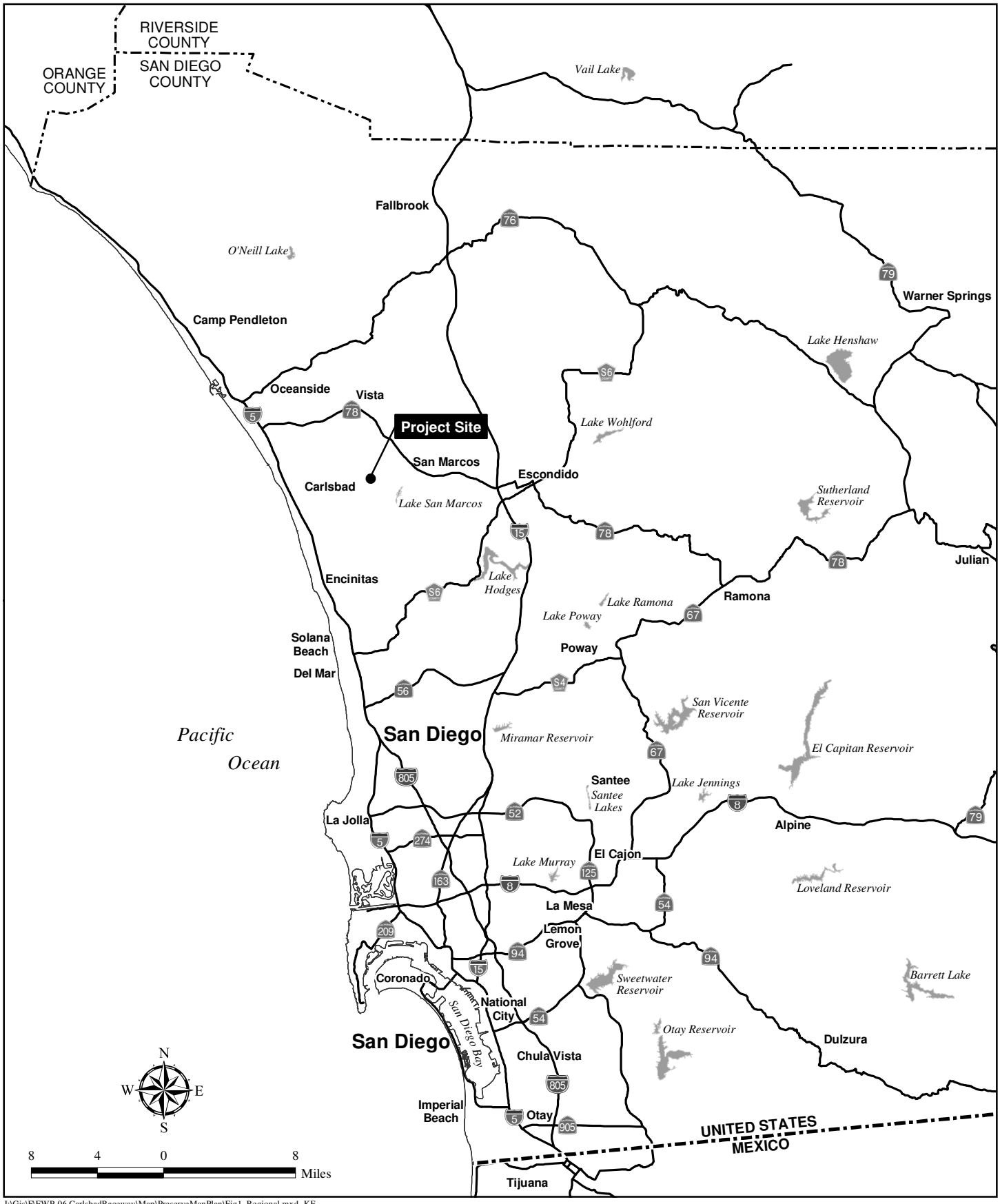
The preserve is located north of Palomar Airport Road and west of Business Park Road in the City of Carlsbad, San Diego County, California (Figure 1). It is within Section 18 of Township 12 South, Range 3 West and Section 13 of Township 12 South, Range 4 West of the 7.5-minute U.S. Geological Survey San Marcos quadrangle map (Figure 2).

The preserve is within Local Facilities Management Zone 18 of the Carlsbad HMP, which includes Linkage D. Linkage D connects Core Areas 5 (Carlsbad Oaks North) and 6 (Villages of La Costa) through Carrillo Ranch and Bressi Ranch. Linkage D is approximately 3 miles long and includes coastal sage scrub, chaparral, grasslands, and riparian habitats (Carlsbad HMP 2004). The Carlsbad HMP identifies a portion of the Carlsbad Raceway site as Proposed Hardline Preserve Area. A Proposed Hardline Preserve Area is defined as properties whose conservation and development areas have been planned as part of the Carlsbad HMP.

2.2 GEOLOGY, SOILS, CLIMATE, AND HYDROLOGY

According to the San Diego Basin Plan (Basin Plan), the project site is located in the Carlsbad Hydrologic Unit (HU 904.00) within the Agua Hedionda Hydrologic Area (HA 904.3). The Carlsbad HU is a roughly triangular shaped area of approximately 210 square miles and extends from east of Lake Wohlford to Solana Beach-Carlsbad along the coast. Drainage within the Carlsbad HU is provided by a number of small to moderate size streams, including Buena Vista, Agua Hedionda, San Marcos, and Escondido creeks. The primary drainage on site (prior to development) was an unnamed tributary to Agua Hedionda Creek, which drained to the Agua Hedionda Lagoon. Annual precipitation in the Carlsbad HU ranges from approximately 11 inches along the coast to over 25 inches in the Laguna Mountains. Rainfall within the vicinity of the project site (City of Carlsbad) averages approximately 11.1 inches per year, with January (2.42 inches), February (2.23 inches), and March (2.11 inches) comprising the wettest months, and June (0.09 inch), July (0.02 inch), and August (0.13 inch) representing the driest months (weather.com 2011).

Eight soil types are present within the preserve area: Altamont clay (9 to 15 percent slopes), Altamont clay (15 to 30 percent slopes), Cieneba coarse sandy loam (15 to 30 percent slopes,



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Regional Location Map

PRESERVE MANAGEMENT PLAN FOR CARLSBAD RACEWAY

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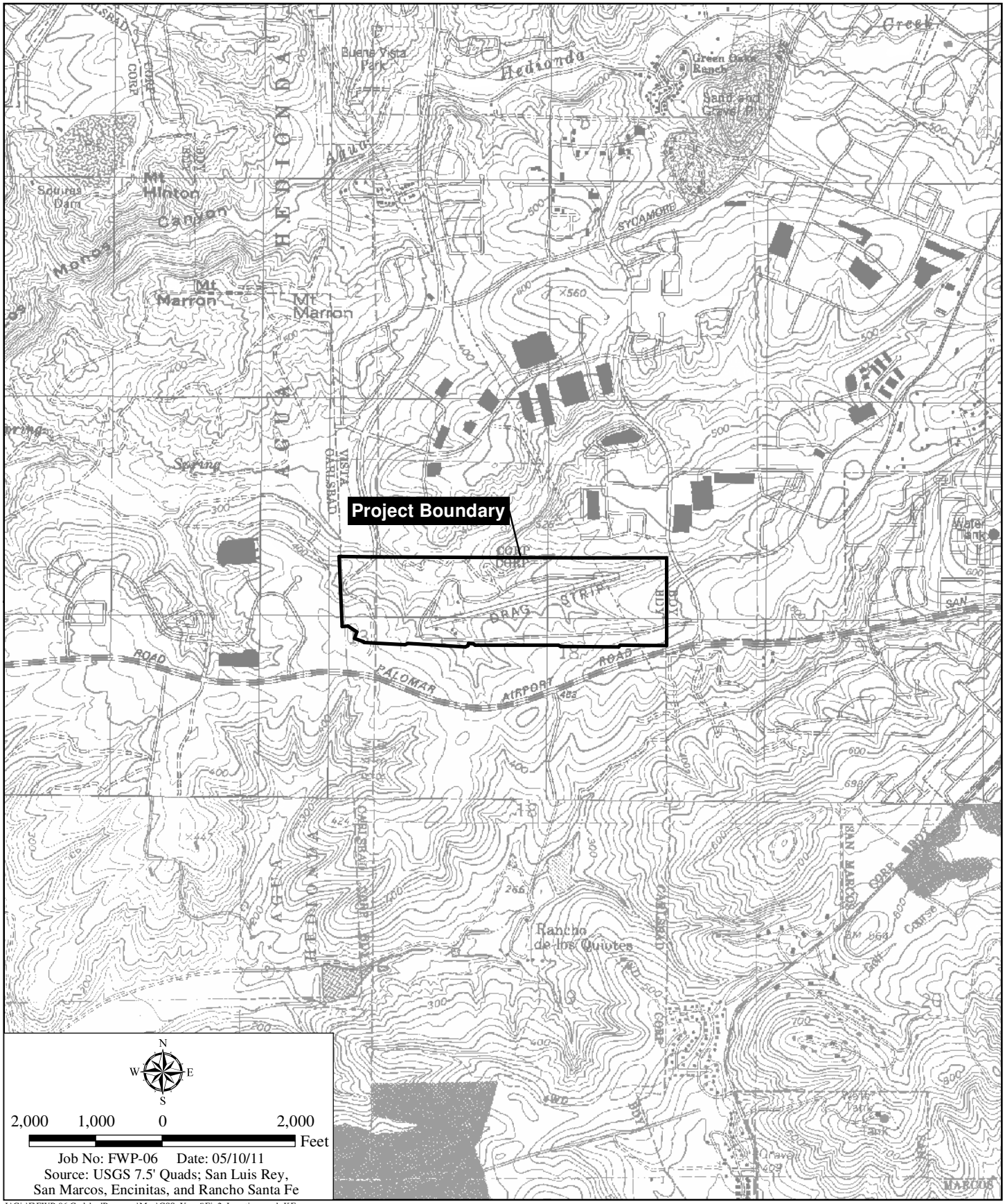
Figure 1



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Project Location Map

PRESERVE MANAGEMENT PLAN FOR CARLSBAD RACEWAY

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Figure 2

eroded), Cieneba very rocky coarse sandy loam (30 to 75 percent slopes), Huerhuero loam (9 to 15 percent slopes), Las Flores loamy fine sand (2 to 9 percent slopes), Salinas clay loam (2 to 9 percent slopes), and Visalia sandy loam (2 to 5 percent slopes; Bowman 1973). Soil types are important and relevant to the preserve area as many sensitive plants species are restricted to certain soil types. For example, California adolphia (*Adolphia californica*) and small flowered morning glory (*Convolvulus simulans*) are associated with clay soils. Elevations within the preserve range from between 323 and 456 feet above mean sea level.

2.3 PRESERVE AREA BOUNDARIES AND HISTORIC/ADJACENT LAND USE

As stated above, the Carlsbad Raceway site was an active automobile and off-road motorcycle racing facility from 1964 through 2004. With construction of the Carlsbad Raceway Business Park project beginning in 2004, a portion of the raceway site was converted into office properties, some of which have been built, and an adjacent part of the raceway site was reclaimed as open space. Upland and riparian restoration was conducted for the Carlsbad Raceway Business Park project and is incorporated into the preserve. This restoration consisted of the removal of the Carlsbad Raceway racetrack, application of a native seed mixture, installation of container stock to manufactured slopes, and multiple years of maintenance and monitoring of these areas, as described in the project's restoration plans (HELIX 2002b and 2002c) and Year 5 annual monitoring reports (HELIX 2012a and 2012b). Restoration has been completed. Some of the southwestern portion of the business park site had previously been used for agriculture, and the southwestern portion of the business park property is currently undeveloped. Office buildings are present to the west, south, and north of the business park property. Undeveloped land/open space in the City of Vista is located to the north of the property. Commercial development exists to the east of the business park property. An existing San Diego Gas & Electric powerline bisects the property.

Approximately 46.25 acres of the site are designated for preservation in open space and are the subject of this PMP (Figure 3).

2.4 OWNERSHIPS AND LEGAL DESCRIPTION

The current owner of the Carlsbad Raceway property open space is:

Fenton Raceway Business Park Property Owners Association
5330 Carroll Canyon Rd., Suite 200
San Diego, CA 92121
858-373-1234

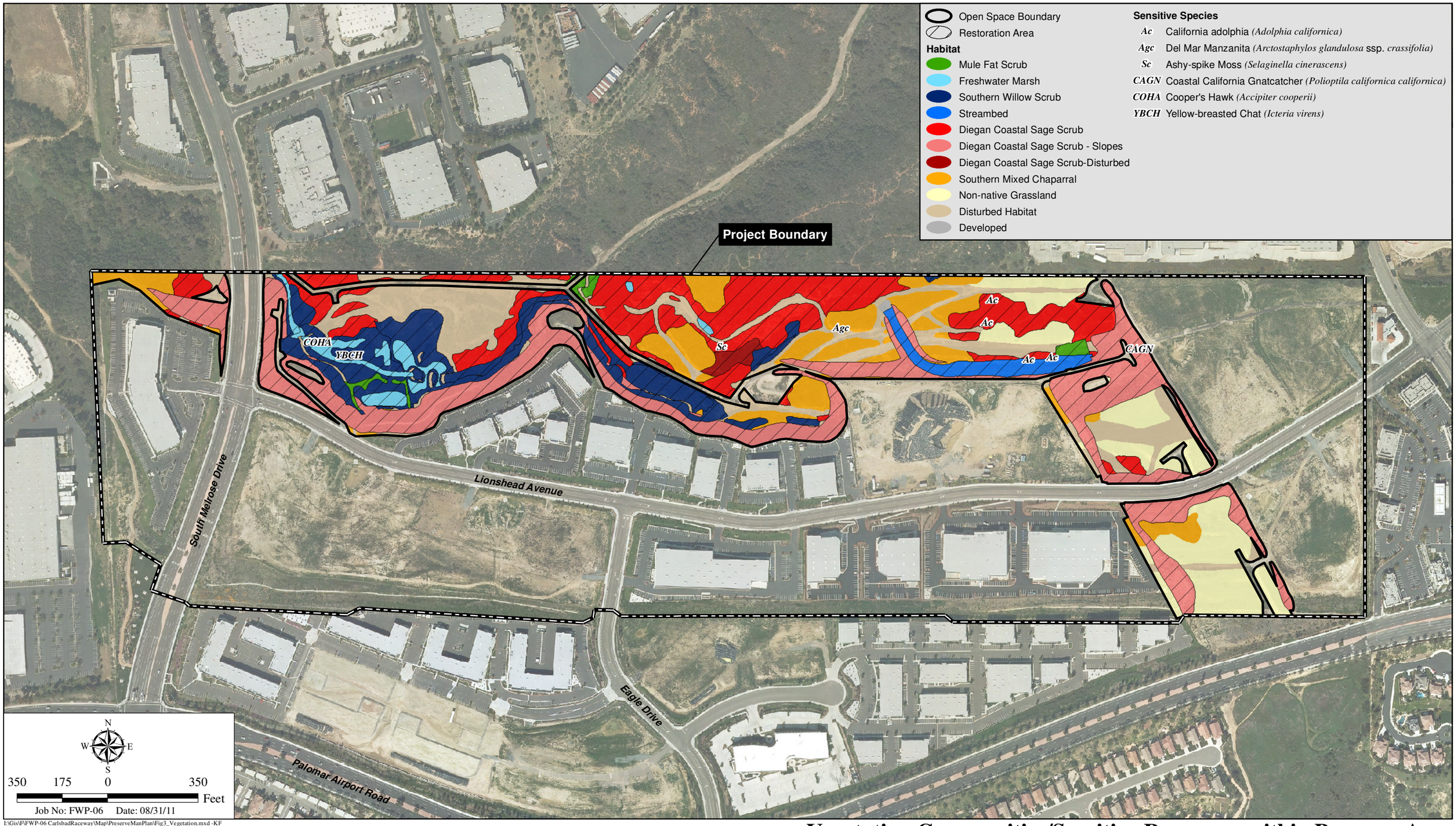
The Fenton Raceway Business Park Property Owners Association (Association) is responsible for coordinating with the Preserve Manager and funding the long term management and monitoring.

2.5 CONSERVATION EASEMENT COMPLIANCE

The CE provides the following list of prohibited uses in the preserve:

- Supplemental watering except for habitat enhancement activities;
- Use of herbicides, pesticides, biocides, fertilizers, or other agricultural chemicals or weed abatement activities, except activities necessary to control or remove invasive or exotic species;
- Incompatible fire protection activities;
- Use of off-road vehicles and use of any other motorized vehicles except in the execution of management duties;
- Livestock grazing or other agricultural activity of any kind;
- Recreational activities including, but not limited to, horseback riding, biking, hunting or fishing;
- Residential, commercial or industrial uses;
- Any legal or de facto division, subdivision or portioning of the preserve, except transfers described in the CE;
- Construction, reconstruction or placement of any building or other improvement, billboard, or sign except those signs permitted as described in the CE;
- Depositing, dumping, or accumulating soil, trash, ashes, refuse, waste, bio-solids, or any other material;
- Planting, introduction or dispersal of non-native or exotic plant or animal species;
- Filling, dumping, excavating, draining, dredging, mining, drilling, removing or exploring for or extraction of minerals, loam, gravel, soil, rock, sand or other material on or below the surface of the preserve;
- Altering the general topography of the preserve, including but not limited to building of roads and flood control work except as permitted by the Agency Permits;
- Removing, destroying, or cutting of native trees, shrubs or other native vegetation, except for: (1) maintenance of existing foot trails or roads, (2) prevention or treatment of disease, (3) control of invasive species which threaten the integrity of the habitat, (4) the Mitigation Plan, or (5) activities described in the CE; and
- Manipulating, impounding or altering any natural watercourse, body of water or water circulation on the preserve, and activities or uses detrimental to water quality, including but not limited to degradation or pollution of any surface or subsurface waters, except as provided in the agency permits.

The Preserve Manager will be responsible for monitoring the preserve to ensure, in conjunction with the Association, that adjacent landowners and the public are not violating the provisions of the CE. To this end, the Preserve Manager will conduct at least quarterly site visits to ensure that the CE boundaries are being respected by the public, as further described below, and that the CE's other requirements regarding removal of trash, maintenance of signage, and repair, remediation, and restoration of damage to the conservation values of the property are being implemented.



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Vegetation Communities/Sensitive Resources within Preserve Area

PRESERVE MANAGEMENT PLAN FOR CARLSBAD RACEWAY

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Figure 3

3.0 HABITAT AND SPECIES DESCRIPTION

The Carlsbad Raceway site has been surveyed multiple times over the past several years. Vegetation was mapped in 1998. Formal jurisdictional delineations were conducted in 1998 (HELIX 1998a) and 2002 (HELIX 2002a). Focused surveys for sensitive plants were conducted in spring 1998 and 2001. Protocol surveys for coastal California gnatcatcher (*Polioptila californica californica*) were conducted on site in 1998, 2001, and 2003 (HELIX 1998b, 2001, and 2003). Quino checkerspot butterfly (*Euphydryas editha quino*) surveys were conducted in 1998 (HELIX 1998c). A biological technical report for the project was prepared in 1998 (HELIX 1998d).

3.1 VEGETATION COMMUNITIES

The following habitat descriptions are based on the preservation and anticipated successful implementation of the riparian and coastal sage scrub restoration for the Carlsbad Raceway project (HELIX 2012a and b). The preserve supports 9 vegetation communities: southern willow scrub, freshwater marsh, mule fat scrub, streambed, Diegan coastal sage scrub (including disturbed and slopes), southern mixed chaparral, non-native grassland, disturbed habitat, and developed land (Figure 3; Table 1).

Table 1
POST-RESTORATION VEGETATION COMMUNITIES

VEGETATION COMMUNITY	HMP HABITAT GROUP	ACRES
Southern willow scrub	A	5.03
Freshwater marsh	A	1.07
Mule fat scrub	A	0.42
Streambed	A	1.03
Diegan coastal sage scrub (including disturbed and slopes)	C	20.64
Southern mixed chaparral	D	5.22
Non-native grassland	E	5.27
Disturbed habitat	F	7.53
Developed	--	0.04
	TOTAL	**46.25**

3.1.1 Southern Willow Scrub

Southern willow scrub (riparian scrub in the Carlsbad HMP) consists of dense, broad-leaved, winter-deciduous stands of trees dominated by shrubby willows (*Salix* spp) in association with mule fat (*Baccharis salicifolia*). This habitat typically occurs on loose, sandy, or fine gravelly alluvium deposited near stream channels during flood flows. Approximately 5.03 acres of

southern willow scrub occur within the central and western portions of the preserve as part of the unnamed drainage.

3.1.2 Freshwater Marsh

Freshwater marsh is characterized by perennial monocots, such as broad-leaf cattail (*Typha latifolia*) or bulrush (*Scirpus* sp.). It occurs in low, regularly flooded areas, typically with little current, and usually forms dense, monotypic stands. Approximately 1.07 acres of freshwater marsh occurs interspersed among patches of southern willow scrub on the western side of the preserve as part of the unnamed drainage.

3.1.3 Mule Fat Scrub

Mule fat scrub is a depauperate, shrubby riparian scrub community dominated by mule fat and interspersed with small willows. This vegetation community occurs along intermittent stream channels with a fairly coarse substrate and moderate depth to the water table. This early seral community is maintained by frequent flooding, the absence of which would lead to a cottonwood or sycamore dominated riparian woodland or forest (Holland 1986). Approximately 0.42 acre of mule fat scrub occurs in small patches throughout the preserve.

3.1.4 Streambed

Approximately 1.03 acres of streambed of an unnamed tributary to Agua Hedionda Creek runs through the preserve. The area mapped as streambed is in the eastern portion of the preserve and currently supports a stand of willows and mule fat.

3.1.5 Diegan Coastal Sage Scrub (including disturbed and slopes)

Diegan coastal sage scrub supports a diverse suite of sensitive animal and plant species, including several that are listed by federal and/or state agencies. It is one of the major shrub communities in California, where it occupies dry areas, typically with shallow soils. Shrubs within this community are generally drought-deciduous species with relatively shallow root systems and open canopies. Black sage (*Salvia mellifera*), California sagebrush (*Artemisia californica*), coyote brush (*Baccharis pilularis*), and deerweed (*Lotus scoparius*) were the dominant species, with California buckwheat (*Eriogonum fasiculatum*) and California encelia (*Encelia californica*) as subdominant species. Approximately 20.64 acres of Diegan coastal sage scrub occurs throughout the preserve. The Diegan coastal sage scrub that slopes shown in Figure 3 refers to the areas being restored as part of the 5-year maintenance and monitoring period and generally occur along the southern, western, and eastern portions of the preserve. A small area of disturbed coastal sage scrub occurs in the central portion of the preserve.

3.1.6 Southern Mixed Chaparral

Southern mixed chaparral is composed of broad-leaved sclerophyllous shrubs that can reach 6 to 10 feet in height and form dense, often nearly impenetrable stands with poorly developed understories. In this mixed chaparral, the shrubs are generally tall and deep-rooted, with a well

developed soil litter layer, high canopy coverage, low light levels within the canopy, and lower soil temperatures (Keeley and Keeley 1988). This vegetation community occurs on dry, rocky, often steep north-facing slopes with little soil. As conditions become more mesic, broad-leaved sclerophyllous shrubs that re-sprout from underground root crowns become dominant. Approximately 5.22 acres of southern mixed chaparral occurs within the eastern portion and extreme western portion of the preserve interspersed within Diegan coastal sage scrub. Dominant species within this community include ceanothus (*Ceanothus* spp.), lemonadeberry (*Rhus integrifolia*), and black sage.

3.1.7 Non-native Grassland

Non-native grassland is a dense to sparse cover of annual grasses, often associated with numerous species of showy, flowered native annual forbs. This association occurs on gradual slopes with deep, fine-textured, usually clay soils. Most of the annual introduced species that comprise the majority of species and biomass within the non-native grassland originated from the Mediterranean region, an area with a long history of agriculture and a climate similar to California. These two factors, in addition to intensive grazing and agricultural practices in conjunction with severe droughts, contributed to the successful invasion and establishment of these species and the replacement of native grasslands with an annual dominated non-native grassland (Jackson 1985). Approximately 5.27 acres of non-native grassland occurs within the eastern portion preserve. Dominant species include oats (*Avena* sp.), red brome (*Bromus rubens*), ripgut (*B. diandrus*), ryegrass (*Lolium* sp.), and mustard (*Brassica* sp.).

3.1.8 Disturbed Habitat

Disturbed habitat includes land cleared of vegetation (e.g., dirt roads), and land containing a preponderance of non-native plant species, such as ornamentals or ruderal exotic species, that take advantage of disturbance (previously cleared or abandoned landscaping). Approximately 7.53 acres of disturbed habitat occurs within the western portion of the preserve north of the southern willow scrub and is surrounded by Diegan coastal sage scrub.

3.1.9 Developed Land

Developed land is where permanent structures and/or pavement have been placed, which prevents the growth of vegetation, or where landscaping is clearly tended and maintained. Approximately 0.04 acre of developed land consisting of a rip-rap lined portion of the streambed that occurs in the northeast portion of the preserve. Paved access roads and utility access roads are not part of the preserve.

3.2 PLANT SPECIES

Plant species observed within the preserve were recorded and are included in Appendix A.

3.3 WILDLIFE SPECIES

Animal species observed or detected within the preserve were recorded and are included in Appendix B.

Wildlife corridors connect otherwise isolated pieces of habitat and allow movement or dispersal of plants and animals. Local wildlife corridors allow animals the access to resources such as food, water, and shelter within the framework of their daily routine. For example, animals can use these corridors to travel between their riparian breeding habitats and their upland burrowing habitats. Regional corridors provide these functions over a larger scale and link two or more large habitat areas, allowing the dispersal of organisms and the consequent mixing of genes among populations.

As stated above, the site contains Linkage D, which connects Core Areas 5 and 6. Linkage D was identified as being a moderately effective linkage in the Carlsbad HMP (prior to restoration). Animal species noted by HELIX (by visual observation, detection, scat, or tracks) during restoration monitoring activities include yellow-breasted chat (*Icteria virens*), coastal California gnatcatcher (*Polioptila californica californica)*, coyote (*Canis latrans*), and bobcat (*Lynx rufus*). As such, the linkage continues to be moderately effective and continues to improve.

3.4 SPECIES COVERED BY THE HMP AND OTHER SENSITIVE SPECIES

Plant Species

Three sensitive plant species have been observed within the preserve during restoration monitoring activities: San Diego marsh-elder (*Iva hayesiana*), small flowered morning glory, and southwestern spiny rush (*Juncus acutus* ssp. *leopoldii*). It should be noted that 3 additional sensitive plant species were recorded within the preserve prior to development and include California adolphia, Del Mar manzanita (*Arctostaphylos glandulosa* ssp. *crassifolia*), and ashy spike-moss (*Selaginella cinerascens*). These 3 species are not included in Appendix A, given that this appendix includes only plant species recorded within the riparian and upland restoration areas during restoration monitoring. These 6 species are discussed below (listed in alphabetical order by scientific name).

California adolphia (*Adolphia californica*)
Status: --/--; CNPS List 2.1
Habitat: Clay soils in dry canyons and washes in coastal sage scrub and chaparral.
Status on site: Approximately 50 individuals occur in Diegan coastal sage scrub areas on site.
Measures to Reduce Threats to Species Survival: No management measures are identified for this species pursuant to the Carlsbad HMP.

Del Mar manzanita (*Arctostaphylos glandulosa* ssp. *crassifolia*)
Listing: FE/--; CNPS List 1B.1
Habitat: Relatively open, coastal chaparral. At occasional inland sites it occurs in denser mixed chaparral vegetation.

Status on site: Species observed within southern mixed chaparral in the central portion of the open space.
Measures to Reduce Threats to Species Survival: Management measures will focus on minimizing edge effects, preventing disturbance, and protecting against too frequent fires.

Small-flowered morning-glory (*Convolvulus simulans*)
Status: --/--; CNPS List 4.2
Habitat: Coastal clay areas in openings of chaparral, sage scrub, and grasslands.
Status on site: Observed within the Diegan coastal sage scrub restoration area in Year 4 (2010). This species was not included in the plant or seed mix that was installed in the restoration areas.
Measures to Reduce Threats to Species Survival: No management measures are identified for this species pursuant to the Carlsbad HMP.

San Diego marsh-elder (*Iva hayesiana*)
Status: --/--; CNPS List 2.2
Habitat: Creeks of intermittent streambeds are preferred habitat for this low-growing, conspicuous shrub. Typically, the riparian canopy is open, allowing substantial sunlight to reach this marsh-elder. Sandy alluvial embankments with cobbles are frequently utilized.
Status on site: Observed throughout the riparian restoration area in 2008, 2009, and end of 2010. This species was planted and seeded in the riparian restoration area in 2006.
Measures to Reduce Threats to Species Survival: Management measures will focus on minimizing edge effects.

Southwestern spiny rush (*Juncus acutus* ssp. *leopoldii*)
Status: --/--; CNPS List 4.2
Habitat: Moist, saline, or alkaline soils in coastal salt marshes and riparian marshes.
Status on site: Observed throughout the riparian restoration area in 2008, 2009, and 2010. This species was included in the riparian restoration seed mix.
Measures to Reduce Threats to Species Survival: No management measures are identified for this species pursuant to the Carlsbad HMP.

Ashy spike-moss (***Selaginella cinerascens***)
Listing: --/--; CNPS List 4.1
Habitat: Flat mesas in coastal sage scrub and chaparral. A good indicator of site degradation, as it rarely inhabits disturbed soils.
Status on site: Observed within Diegan coastal sage scrub within the preserve prior to development (Figure 3).
Measures to Reduce Threats to Species Survival: No management measures are identified for this species pursuant to the Carlsbad HMP.

Animal Species

Four sensitive animal species have been observed within the preserve during restoration monitoring activities: coastal California gnatcatcher (*Polioptila californica californica*), Cooper's hawk (*Accipiter cooperii*), yellow-breasted chat (*Icteria virens*), and orange-throated whiptail (*Aspidoscelis* [*Cnemidophorus*] *hyperythrus*). It should be noted that 3 additional sensitive

species were recorded on the site prior to development and include loggerhead shrike (*Lanius ludovicianus*), white-tailed kite (*Elanus leucurus*), and California horned lark (*Eremophila alpestris actia*). These species were not noted during restoration monitoring activities. As such, these three species are not included in Appendix B given that this appendix includes only animal species recorded within the riparian and upland restoration areas during restoration monitoring. These seven species are discussed below (listed in alphabetical order by scientific name).

Cooper's hawk (*Accipiter cooperii*)
Status: --/CDFW Watch List MHCP Covered
Habitat(s): Oak groves, mature riparian woodlands, and eucalyptus stands or other mature forests.
Status on site: Observed within the riparian restoration area in 2010 (Figure 3) and in the riparian and Diegan coastal sage scrub restoration areas in 2011 (locations not mapped).
Measures to Reduce Threats to Species Survival: Management measures will focus on minimizing disturbances during the breeding season.

Orange-throated whiptail (*Aspidoscelis* [*Cnemidophorus*] *hyperythrus*)
Status: --/ CDFW California Species of Special Concern, MHCP Covered
Habitat(s): Semi-arid brushy areas typically with loose soil and rocks, including washes, streamsides, rocky hillsides, and coastal chaparral.
Status on site: Observed within the Diegan coastal sage scrub restoration area in 2011 (location not mapped).
Measures to Reduce Threats to Species Survival: No management measures are identified for this species pursuant to the Carlsbad HMP.

White-tailed kite (*Elanus leucurus*)
Status: --/Fully Protected
Habitat(s): Riparian woodlands and oak or sycamore groves adjacent to grassland
Status on site: Observed on site prior to development.
Measures to Reduce Threats to Species Survival: No management measures are identified for this species pursuant to the Carlsbad HMP.

California horned lark (*Eremophila alpestris actia*)
Status: --/CDFW Watch List
Habitat(s): Coastal strand, arid grasslands, and sandy desert floors
Status on site: Observed on site prior to development.
Measures to Reduce Threats to Species Survival: No management measures are identified for this species pursuant to the Carlsbad HMP.

Yellow-breasted chat (*Icteria virens*)
Status: --/SSC; MHCP Covered
Habitat: Brushy tangles, briars, stream thickets, riparian scrub, and riparian woodland; breeds in riparian forest.
Status on site: Observed within the riparian restoration area in Year 4 (2010).
Measures to Reduce Threats to Species Survival: Management measures will focus on minimizing activities within the preserve that degrade riparian forest, riparian woodland, and riparian scrub habitats.

Loggerhead shrike (*Lanius ludovicianus*)
Status: BCC/SSC
Habitat(s): Grassland, open sage scrub, chaparral, and desert scrub
Status on site: Observed on site prior to development.
Measures to Reduce Threats to Species Survival: No management measures are identified for this species pursuant to the Carlsbad HMP.

Coastal California gnatcatcher (*Polioptila californica californica*)
Status: FT/SSC; MHCP Covered
Habitat: Coastal sage scrub, particularly with abundant California sage brush.
Status on site: A single individual was heard within the coastal sage scrub restoration area, in the eastern side of the site during Year 4 (2010). This species was observed in the same area and in the vicinity of the wetland restoration site in Year 5.
Measures to Reduce Threats to Species Survival: Management measures will focus on minimizing adverse edge effects and protecting against frequent fires.

3.5 FIRE HISTORY

There are no recent records of fire within the preserve.

4.0 MANAGEMENT AND MONITORING GOALS

This section provides goals and tasks in the form of Area Specific Management Directives (ASMDs) to direct management of and monitoring within this preserve. The goals and ASMDs guide all management decisions until the plan is revised and updated. Because management and monitoring are interdependent, they are discussed together.

4.1 BIOLOGICAL GOALS

4.1.1 General Habitat Monitoring

Goal: Implement a vegetation monitoring program. Determine baseline vegetation structure and composition. Use baseline condition and long-term monitoring results to determine changes in vegetation communities over time and develop management policies.

ASMD

- A vegetation monitoring protocol will be conducted during the first year of long-term management and within the preserve every five years using the following methodology or other suitable method:

    1. Vegetation will be mapped on a high quality 1" = 400' scale aerial image. This mapping will be verified by ground-truthing. A minimum mapping unit of 0.25 acre will be used. The final mapping will be digitized and uploaded into a GIS database.

2. At least five photo-documentation stations will be mapped on an aerial photo using Global Positioning System (GPS) satellite equipment. These locations will be selected to capture large areas of contiguous habitat to allow for monitoring of visual changes in habitat quality and quantity.

3. Three permanent 10 meter (m) x 10 m sample locations will be established (i.e., permanently mapped using GPS equipment) within wetland and upland habitat (6 total sites). At each location, the 5 dominant shrub and 5 dominant herbaceous species will be identified, and the percent cover of each species and its relative abundance based on a visual estimate will be recorded.

- The preserve will be visually inspected, during regular maintenance and surveying activities, for damage to the natural condition and conservation values of the property, including damage from man-made causes, non-natural parasites, and non-native or exotic species. If substantial damage to the natural condition and conservation values are noted, the area will be monitored more closely until it has stabilized naturally or as a result of repair, remediation, and restoration measures.

4.1.2 Wetlands and Non-wetland Waters and Upland Habitats

Goal: Preserve and manage wetlands and uplands to provide for the continued health and persistence of these vegetation communities and to provide habitat for species that use these areas.

Threat – Infestation by Invasive Non-native Plants

Non-native invasive weed species are a particularly significant threat to riparian and wetland communities throughout southern California. Non-native invasive plants are a ubiquitous threat to coastal sage scrub communities throughout southern California. Pampas grass (*Cortaderia selloana*), tamarisk (*Tamarix* sp.), rabbitsfoot grass (*Polypogon monspeliensis*), and Indian sweet clover (*Melilotus indica*) are species of particular concern in the Carlsbad Raceway preserve. Pampas grass had previously occurred as scattered individuals in the Diegan coastal sage scrub restoration areas and as occasional individuals in the remainder of the preserve. Tamarisk were present as few individuals within the preserve. Patches of rabbitsfoot grass and Indian sweet clover occurred throughout the preserve. In Year 5, non-native species cover was less than 10 percent within the restoration areas; invasive species cover was much less.

ASMD

- Non-native species considered to be highly invasive by the California Invasive Plant Council (Cal-IPC 2006) High and Moderate category species (Target Species) shall be targeted for eradication within preserve boundaries. Eradication may include removal by hand, weed whip, mowing or, if necessary, herbicides. The least toxic method that effectively removes the weeds should be used. Eradication of established invasives may require several herbicide applications per year for several years, and shall be conducted at the appropriate time of year for the targeted species based on that species' biology.

Herbicides may only be applied by a licensed pesticide applicator under the supervision of a qualified biologist.

- New infestations by invasive non-native plants shall be monitored for at least annually.

Threat – Unauthorized Access

Increased human and pet access is often a concern in preserve areas and can result in increased edge effects such as trampling of vegetation, introduction of non-native species, unauthorized dumping, harassment of wildlife, and other impacts. The preserve will be adjacent to undeveloped lands to the north and developed land to the south, east, and west. Currently, the Vista Water District has an easement traversing the northern portion of the preserve with no controlled access. In addition, residents illegally use portions of the area to ride horses. Horse tracks have been observed within the eastern portion of the restoration area within the mule fat scrub and Diegan coastal sage scrub, in addition to the trails in the central portion of the preserve. This uncontrolled access can result in direct impacts to native habitat from unauthorized trails, trash, and unauthorized dumping; however, damage to native habitat was not documented by HELIX during the 5-year restoration period.

<u>ASMD</u>

- Two additional signs stating that the area is undergoing restoration were installed in May 2011. The Preserve Manager shall install additional fencing or signage as necessary to deter unauthorized access.

- Once all the commercial buildings are constructed and in use, it is possible that the horseback riding will discontinue. However, it is possible that residents from south of Palomar Airport Road will use the preserve to walk dogs or exercise.

- Conduct regular (i.e., quarterly) patrols to identify sensitive species habitat subject to human impacts.

- The Preserve Manager shall coordinate with the Vista Water District, as well as commercial building owners adjacent to the preserve.

- Public outreach to occupants of the industrial park and trail users

Threat – Changes in Fire Frequency

Fire is a natural part of southern California ecosystems, including within the preserve. Diegan coastal sage scrub is a fire-adapted vegetation community. Fires in southern California historically occur most frequently in late summer and fall when Santa Ana winds result in very complete burns of Diegan coastal sage scrub. Because of the preserve's proximity to existing residences, and the City of Carlsbad's policy of extinguishing all fires as quickly as possible, fires are less likely to result in complete burns. However, the frequency of fires may increase because of the potential for increased human access to areas adjacent to the preserve, resulting in increased fire return interval.

Increases in fire return interval (increased fire frequency over historic levels) could affect the long-term viability of habitats through type conversion (e.g., Diegan coastal sage scrub to non-native grassland). Additionally, because of the small size of the preserve, a single fire event could burn the entire preserve, resulting in local extirpation of species. Adjacent preserve areas may provide sources of recolonization if they do not burn as well.

ASMD

- Because of the need to protect property, management strategies will not include letting fires burn to allow for complete burns. The focus instead will be to minimize or eliminate any increase in fire frequency within the preserve by minimizing human access and working with adjacent development areas to maintain fuel management zones.

Threat – Erosion and Sedimentation

Unchecked erosion can result in degradation of upland and wetland habitats through elimination of topsoil and sedimentation. Erosion is often the result of uncontrolled access that results in unauthorized trails. Excessive erosion also may occur following fire events that eliminate vegetative cover.

ASMD

- Excessive erosion within the preserve will be addressed through Best Management Practices (BMP), such as use of straw wattles, placement of gravel bags, and other measures as appropriate. BMPs that maximize the use of native material should be selected whenever feasible.

- Controlling access to the preserve as outlined in the Unauthorized Access section above will help to minimize erosion from unauthorized foot trails.

4.1.3 Sensitive Species

Goal: Protect and maintain habitat that supports sensitive plants and animals and reduce or eliminate threats to species on site.

Four sensitive animal species have been observed within the preserve during restoration monitoring activities: coastal California gnatcatcher, Cooper's hawk, yellow-breasted chat, and orange-throated whiptail.

Threat – Unauthorized Access

ASMD

- Conduct quarterly patrols to identify sensitive species habitat subject to human impacts.

- Conduct vegetation monitoring pursuant to Section 4.1.1.

- Remove target species that may damage sensitive species habitat consistent with Section 4.1.2. This habitat management will benefit sensitive species occurring on site.

- Avoid activities that may disturb sensitive species during breeding season, e.g., non-native plant removal, during the sensitive species' breeding season.

- Conduct surveys and generate GIS data for the location and distribution of the coastal California gnatcatcher, Cooper's hawk, and yellow-breasted chat within the preserve. Brown-headed cowbirds (Molothrus ater) should also be noted during the surveys. Surveys shall meet current protocol (three surveys for the coastal California gnatcatcher at least one week apart) and be conducted every three years, or less frequently as determined in coordination with the City. Cooper's hawk, yellow-breasted chat, and brown-headed cowbirds will be noted during quarterly preserve monitoring visits. The GPS location(s) of sensitive species will be documented when those species are documented and GIS locations will be submitted to the City each year as part of annual reporting for the preserve.

Threat – Human encampments

Itinerant encampments can be a problem in riparian areas. They can impact nesting birds, especially low to the ground nesting species, directly by hitting a nest while walking through riparian areas, or indirectly by flushing nesting adults or nestlings as a result of activity near a nest.

ASMD

- The Preserve Manager will conduct quarterly patrols to ensure that itinerant encampments do not become established and to minimize human impacts. If encampments are noted they will be removed in conjunction with the Association.

4.1.4 Constraints

Constraints to management include the size of the preserve, potential for ongoing re-introduction of non-native species, and the presence of two listed species (Del Mar manzanita and coastal California gnatcatcher).

Preserve Size

The preserve is approximately 46.25 acres. The overall functioning of the ecosystem can be more easily compromised by factors such human access, fire frequency, and the inability for species to re-establish following fire and flood events.

Infestation by Invasive Non-native Plants

There is an ongoing potential for introduction of invasive, non-native species.

Presence of Listed Species

The presence of two listed species (Del Mar manzanita and coastal California gnatcatcher) limits when habitat management activities, such as the removal of non-native vegetation, can take place and a biologist may need to be on site to monitor maintenance activities during the nesting season. A biologist will oversee maintenance activities when the biologist and manager deem necessary, as determined by the biologist's professional judgment.

4.1.5 Potential Impacts

There is the potential for temporary adverse impacts to habitats and species as part of the overall management of the preserve. Specific examples include incidental impacts to native plant species during non-native plant removal efforts and potential for harassment of nesting bird species during non-native plant removal and survey efforts. These impacts would be avoided and/or minimized by the ASMDs noted above, and the activities associated with these impacts are anticipated to have a net long-term benefit to the habitat and sensitive species within the preserve.

4.2 PUBLIC USE GOALS

Given the location of the preserve and the presence of two listed species, the preserve is not intended to provide public use or access. As a result of the lack of accessible or sufficient terrain, no trails are proposed within the preserve. Informal trails within the preserve are not allowed uses. When the preserve boundaries were established, several existing trails were present, mostly in the northern portion of the preserve. The Preserve Manager will track the locations of informal trails throughout the preserve as part of the regular preserve patrols and general habitat monitoring. Trails will be closed off with fencing or other deterrents, as determined by the Preserve Manager and will be passively revegetated when necessary. Signage may also need to be used at closed trails to inform the public of the closure to deter future use.

Goal: Limit public access and use in order to be compatible with the conservation goals and obligations of the OSMP, HMP, and MHCP, while providing public outreach and education on the importance of the preserve.

ASMD

- The Preserve Manager will patrol quarterly and coordinate with the Association to enforce access rules and regulations.

- The Preserve Manager, in conjunction with the Association, will coordinate with the Vista Water District and adjacent land owners to identify appropriate locations for fencing and signage to minimize or eliminate unwanted use and trespass.

- The Preserve Manager, with concurrence of the Association, will allow access to the preserve for science and research as appropriate.

- The Preserve Manager will post additional appropriate signage as necessary. Each sign will identify that the property is protected habitat, provide contact information, a list of illegal activities, and other pertinent information.

- The Preserve Manager will remove debris and trash within the preserve on an annual basis.

- The Preserve Manager will close off trails, passively revegetate areas, and post additional signage as necessary.

4.3 FIRE MANAGEMENT GOALS

Goal 1: Protect human life and safety as the first priority of every fire management activity. This is the responsibility of the City's fire department.

Goal 2: Suppress 100% of all unplanned wildland fires, regardless of ignition source, to the smallest size possible, protecting all habitat values at risk in a prioritized manner. This is the responsibility of the City's fire department.

Non-natural fire return intervals resulting in increased fire frequency are the primary concern for the preserve. The open space preserves can be considered a wildland-urban interface. Under certain Santa Ana wind conditions, entire open space preserves, especially smaller preserves such as the Carlsbad Raceway preserve, could be consumed by fire more quickly than a fire suppression unit could arrive on site. The preserve is connected to other conservation areas to the north. Fire can either spread from the Carlsbad Raceway preserve onto those lands, or reach the Carlsbad Raceway preserve from them. Because the preserve is adjacent to urban lands, fire risk is greater. The fire threat comes largely from human-caused ignitions.

The plant and wildlife communities of the preserve have adapted to a natural fire regime as a key natural ecological disturbance process, primarily driven by weather and the low moisture content of vegetation in late summer and fall. These natural fire regimes are altered by habitat fragmentation that does not allow natural fire regimes to continue without placing adjacent homes and businesses at risk, thereby increasing pressure on fire protection agencies and land managers to suppress wildfires. Additionally, the abundance of exotic annual grasses and forbs has changed fuel load characteristics such that fires can ignite and carry through into shrub lands more easily.

Based on these considerations, the risk of extreme fire scenarios to species that are the focus of management should be evaluated in the context of the managed preserve. Fire management goals should focus on (1) achievement of biological goals, and (2) hazard reduction for humans and their property.

<u>ASMD</u>

- Ensure through the removal of Target Species that avoidable fuel loads do not accumulate within the property. Develop guidelines through a qualified biologist to

identify circumstances where fuel modification activities (such as trimming or removing vegetation) may be desirable and appropriate. Continue to maintain existing firebreaks to help check the spread of a fire.

5.0 ADAPTIVE MANAGEMENT

Goal: Ensure that, through the monitoring and reporting process, results of management are evaluated and management is adjusted appropriately to meet the PMP goals and the City of Carlsbad's commitment to the conservation goals of the HMP/MHCP.

The term adaptive management was adopted by Holling (1978) for natural resource management, who described adaptive management as an interactive process that not only reduces but also benefits from uncertainty. Adaptive management includes steps that may be involved in a long-term adaptive implementation program, including opportunistic learning, management, monitoring, and directing the results of analysis and assessment back into the program through decision makers. It is important that the PMP incorporate the flexibility to change implementation strategies after initial start up. The PMP is intended to be flexible enough to develop adaptive management strategies that will facilitate and improve the decision-making process for operating the conservation program of the PMP as well as provide for informative decision making. The PMP is also intended to be flexible enough to consider management and monitoring methods suggested by the Regional Management and Monitoring Group that would be appropriate for the preserve.

Adaptive management relies on monitoring efforts such as those outlined in Section 4 above to detect changes in species, habitats, and/or threats. Linking the monitoring program with adaptive management actions will inform preserve managers of the status of target species, natural communities, and essential ecological processes, as well as the effectiveness of management actions in a manner that provides data to allow informed management actions and decisions. When change is detected, the Preserve Manager assesses the information and can respond by initiating, modifying, or even ending a particular management strategy, if necessary. An important component of implementing the management measures described above will include evaluating data from monitoring activities to determine whether trends in threats are part of a natural cycle of fluctuation or are anthropogenic. If there is a substantial decline in native species compared with the baseline (e.g., greater presence of invasive non-native plants) or other apparent threats to habitat conditions are observed, remedial measures will be evaluated and can be implemented on an as-needed basis. Active adaptive management measures (e.g. pilot studies and hypothesis testing) shall be limited to funds available for adaptive management as detailed in the Property Analysis Record (PAR).

<u>ASMD</u>

- Continue to learn and modify management approaches by testing assumptions through purposeful scientific monitoring.

- Annually assess the need for each management strategy and update this PMP as appropriate to meet the commitment to Carlsbad HMP conservation goals.

- Coordinate with the Regional Management and Monitoring Group on monitoring methods.

6.0 ADMINISTRATION AND REPORTING

This section addresses the operation and maintenance of the PMP, including funding and staffing, and reporting.

6.1 ANNUAL REPORTS, WORK PLANS, AND PRESERVE MANAGEMENT PLAN

The SDHC will begin preserve management in February 2014. The first annual report summarizing the status of the preserve, monitoring survey results, and all major management tasks will be prepared and provided to the City by November 15, 2014 (covering February to October 2014). Subsequent annual reports will be provided by November 15 (covering activities from November through October) each of the following years. The report shall discuss the previous year's management and monitoring activities, as well as management/monitoring anticipated in the upcoming year. It shall provide a concise and complete summary of management and monitoring methods, identify new management issues, address management issues raised in the previous year's report, and report on the success or failure of management approaches (based on monitoring). It shall outline appropriate repair, remediation, or restoration measures where damage to the natural condition and conservation values needs to be corrected. It shall include a summary of changes from baseline or previous year conditions, including an assessment of the overall health of vegetation communities in the preserve and any changes in health or distribution of sensitive plant or animal populations, and any areas of increased trespass or dumping. Any changes will be documented on a preserve map. The report shall also address the need for any adaptive management resulting from previous monitoring and provide a methodology for measuring the success of any new or modified maintenance and/or monitoring measures. The report will also provide a financial summary describing expenditures for the year and the status of the habitat management budget.

This PMP shall be updated every five years, if necessary, based on data collected during the annual reporting efforts, including photo documentation. The update should review any changes in site conditions, management priorities, and adaptive management strategies. Additionally, management strategies may evolve, or the property could be reviewed within the context of ongoing regional planning efforts that may warrant revisions to the PMP. Implementation of active adaptive management strategies will be limited to funds available in the PAR.

The annual report will summarize management of the annual budget and costs associated with one-time and ongoing management tasks, with the expectation that there will be year to year variability of management costs based on management needs for any given year. A discussion of projected versus actual costs, a review of the Association's budget and projected and actual annual costs will also be provided.

6.2 DATA MANAGEMENT

Vegetation, sensitive resource data, and non-native species mapping will be maintained in a digital (GIS) format and will be provided on disc to the City of Carlsbad every three years. Photo documentation of the site will be maintained digitally and also will be provided to the City annually.

6.3 COMMUNICATION AND COORDINATION

The Preserve Manager will coordinate with the City of Carlsbad, the City's Preserve Steward and as necessary, other preserve managers, the resource agencies, and the general public. The Preserve Manager will participate in one annual public workshop for PMP implementation hosted by the City.

It is important that the preserve be accepted by the community as a valuable amenity and important resource. It is a goal of this plan that local residents take pride in the protection of the preserve.

ASMD

- The Preserve Manager will participate in one annual public workshop for PMP implementation hosted by the City.
- The Preserve Manager will coordinate with the City and the City's Preserve Steward.
- The Preserve Manager will attend quarterly preserve manager meetings with the City.

6.4 BUDGET MANAGEMENT

Implementation of the PMP will be paid for by assessments levied by the Association on each of the lots within the Fenton Raceway Business Park. The assessments are collection annually by the Association and are required and guaranteed through the covenants, conditions, and restrictions (CC&R's) established for the business park.

6.5 OPERATIONS AND STAFFING

The SDHC will assign a manager for this site who will be responsible for implementation of the field management and monitoring efforts. Weeding and specific management efforts will be conducted by landscape maintenance crews overseen by the manager. A biologist will oversee maintenance activities when the biologist and manager deem necessary, as determined by the biologist's professional judgment. The executive director for SDHC will oversee implementation of the PMP, as well as coordinate with the Owner's Association on preparation of the annual budget.

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Appendix A

PLANT SPECIES OBSERVED

Appendix A
PLANT SPECIES OBSERVED WITHIN CARLSBAD RACEWAY OPEN SPACE

FAMILY	SCIENTIFIC NAME	COMMON NAME
DICOTYLEDONES		
Adoxaceae	*Sambucus mexicana*	blue elderberry
Amaranthaceae	*Sarcocornia pacifica*	Pacific pickleweed
Anacardiaceae	*Malosma laurina*	laurel sumac
	Rhus integrifolia	lemonadeberry
Apiaceae	*Apium graveolens**	common celery
Asteraceae	*Ambrosia psilostachya*	western ragweed
	Artemisia californica	California sagebrush
	Artemisia douglasiana	Douglas mugwort
	Baccharis pilularis	coyote brush
	Baccharis salicifolia	mule fat
	Baccharis sarothroides	broom baccharis
	*Carduus pycnocephalus**	Italian thistle
	*Centaurea melitensis**	star thistle
	*Chamomilla suaveolens**	pineapple weed
	Conyza canadensis	horseweed
	*Cotula coronopifolia**	brass buttons
	Deinandra fasciculata	fascicled tarplant
	*Dittrichia graveolens**	stinkwort
	Encelia californica	California encelia
	Eriophyllum confertiflorum	golden-yarrow
	Gazania sp.	gazania
	Gnaphalium bicolor	bicolor cudweed
	Gnaphalium californicum	California everlasting
	Hedypnois cretica	Crete hedypnois
	Heterotheca grandiflora	telegraph weed
	Isocoma menziesii	goldenbush
	Isocoma menziesii var. *menziesii*	San Diego goldenbush
	Iva hayesiana†	San Diego marsh-elder
	Lasthenia californica	goldfields
	*Picris echioides**	bristly ox-tongue
	Pluchea odorata	salt marsh fleabane
	*Sonchus asper**	spiny sowthistle
	*Sonchus oleraceus**	common sow thistle
	Symphyotrichum subulatum var. *ligulatum*	slim aster
	Xanthium strumarium	cocklebur
Boraginaceae	*Heliotropium curassavicum*	salt heliotrope
Brassicaceae	*Brassica nigra**	black mustard
	Rorippa nasturtium-aquaticum	water cress
Cactaceae	*Opuntia littoralis*	coastal prickly pear

Appendix A (cont.)
PLANT SPECIES OBSERVED WITHIN CARLSBAD RACEWAY OPEN SPACE

FAMILY	SCIENTIFIC NAME	COMMON NAME
DICOTYLEDONES (cont.)		
Capparaceae	*Isomeris arborea*	Bladderpod
Caryophyllaceae	*Spergularia* sp.*	sand-spurrey
Chenopodiaceae	*Salicornia virginica*	woody glasswort
	*Salsola tragus**	Russian thistle
Convolvulaceae	*Calystegia macrostegia*	morning-glory
	Convolvulus simulans†	small flowered morning glory
Fabaceae	*Lathyrus vestitus*	sweet pea
	*Lotus corniculatus**	bird's-foot trefoil
	Lotus purshianus	Spanish clover
	Lotus scoparius	deerweed
	Lupinus bicolor	miniature lupine
	Lupinus succulentus	arroyo lupine
	Medicago polymorpha	bur clover
	*Melilotus albus**	honey clover
	*Melilotus indica**	Indian sweet clover
	*Trifolium hirtum**	rose clover
Fagaceae	*Quercus agrifolia* var. *agrifolia*	coast live oak
	Quercus berberidifolia	scrub oak
Geraniaceae	*Erodium cicutarium**	red-stem filaree
Grossulariaceae	*Ribes speciosum*	fuschia-flowered gooseberry
Lamiaceae	*Salvia mellifera*	black sage
Malvaceae	*Malacothamnus fasciculatus*	chaparral mallow
Myrsinaceae	*Anagallis arvensis**	red pimpernel
Onagraceae	*Camissonia* sp.	sun cup
	Epilobium ciliatum	fringed willowherb
	Oenothera elata ssp. *hookeri*	great marsh evening-primrose
Phrymaceae	*Mimulus aurantiacus*	monkey-flower
Plantaginaceae	*Plantago ovata*	woolly plantain
Platanaceae	*Platanus racemosa*	western sycamore
Polemoniaceae	*Navarretia hamata*	hooked skunkweed
Polygonaceae	*Chorizanthe fimbriata*	fringed spineflower
	Eriogonum fasciculatum	California buckwheat
Rhamnaceae	*Ceanothus* sp. (horticultural)	lilac
Salicaceae	*Populus fremontii* ssp. *fremontii*	Fremont cottonwood
	Salix exigua	narrow-leaved willow
	Salix gooddingii	Goodding's black willow
	Salix lasiolepis	arroyo willow
Saururaceae	*Anemopsis californica*	yerba mansa
Scrophulariaceae	*Castilleja exserta*	owl's clover
Solanaceae	*Datura wrightii*	western jimson weed
Tamaricaceae	*Tamarix* sp.*	tamarisk
Verbenaceae	*Verbena menthifolia*	mint-leaf vervain

Appendix A (cont.)
PLANT SPECIES OBSERVED WITHIN CARLSBAD RACEWAY OPEN SPACE

FAMILY	SCIENTIFIC NAME	COMMON NAME
MONOCOTYLEDONES		
Cyperaceae	*Bolboschoenus maritimus* ssp. *paludosus*	prairie bulrush
	Schoenoplectus acutus var. *occidentalis*	viscid bulrush
	Scirpus acutus var. *occidentalis*	bulrush
Iridaceae	*Sisyrinchium bellum*	blue-eyed grass
Juncaceae	*Juncus acutus* ssp. *leopoldii*†	southwestern spiny rush
Poaceae	*Agrostis* sp.	bent grass
	Avena sp.*	oats
	*Brachypodium distachyon**	purple falsebrome
	*Bromus diandrus**	common ripgut grass
	*Bromus hordeaceus**	soft chess
	Bromus madritensis ssp. *rubens**	foxtail chess
	*Cortaderia selloana**	pampas grass
	Distichlis spicata	saltgrass
	*Lolium multiflorum**	Italian ryegrass
	Nassella lepida	foothill needlegrass
	Nassella pulchra	purple needlegrass
	Phalaris sp.*	canary grass
	*Polypogon monspeliensis**	rabbitsfoot grass
	*Schismus barbatus**	Mediterranean grass
	*Vulpia myuros**	fescue
Typhaceae	*Typha latifolia*	broad-leaf cattail

*Non-native species
†Sensitive species

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Appendix B

ANIMAL SPECIES OBSERVED OR DETECTED

Appendix B
ANIMAL SPECIES OBSERVED
WITHIN CARLSBAD RACEWAY OPEN SPACE

SCIENTIFIC NAME †	**COMMON NAME**
INVERTEBRATES	
GASTROPODA (snails and slugs)	
--	unidentified snail
ARACHNIDA (spiders and relatives)	
--	unidentified spider
CRUSTACEA, Order Isopoda (isopods)	
Armadillidium sp.	pillbug
INSECTA, Order Odonata (dragonflies and damselflies)	
Suborder Zygoptera	unidentified damselfly
Suborder Libellulidae	unidentified dragonfly
INSECTA, Order Coleoptera (beetles)	
Hippodamia convergens	lady beetle (Coccinellidae)
Coccinella septempunctata	seven-spotted ladybug (Coccinellidae)
INSECTA, Order Diptera (flies)	
Family Tipulidae	crane fly
Family Bombyliidae	beefly
Family Culicidae	unidentified mosquito
INSECTA, Order Homoptera (cicadas, hoppers and aphids**)**	
Aphrophora sp.	spittlebug
INSECTA, Order Lepidoptera (butterflies and moths)	
Lepidoptera - Butterflies	
Anthocharis sara	Sara's orangetip butterfly
Apodemia mormo virgulti	Behr's metalmark
Danaus gilippus	striated queen butterfly
Danaus plexippus	monarch butterfly
Erynnis funeralis	funereal duskywing butterfly
Hylephila phyleus	fiery skipper
Junonia coenia grisea	common buckeye butterfly
Leptotes marina	marine blue
Limenitis lorquini	Lorquin's admiral butterfly
Nymphalis antiopa	mourning cloak
Papilio eurymedon	pale swallowtail
Pieris rapae	cabbage white butterfly
Pontia protodice	checkered white butterfly

Appendix B (cont.)
ANIMAL SPECIES OBSERVED
WITHIN CARLSBAD RACEWAY OPEN SPACE

SCIENTIFIC NAME †	**COMMON NAME**
INVERTEBRATES (cont.)	
INSECTA, Order Lepidoptera (butterflies and moths) (cont.)	
Lepidoptera – Butterflies (cont.)	
Vanessa cardui	painted lady butterfly
--	unidentified moth
--	unidentified white butterfly
	unidentified sulphur butterfly
INSECTA, Order Hymenoptera (ants, bees, and wasps)	
Linepithema humile	Argentine ant
Apis mellifera	honeybee
Bombus terricola occidentalis	bumblebee
Pepsis formosa	tarantula hawk
INSECTA, Order Orthoptera (Grasshoppers, Crickets, Katydids)	
--	unidentified grasshopper
VERTEBRATES	
Reptiles	
Squamata – *Snakes and Lizards*	
Uta stansburiana	side-blotched lizard
Birds	
Accipitridae - Hawks, Old World Vultures, Kites, Harriers, and Eagles	
Accipiter cooperii†	Cooper's hawk
Buteo jamaicensis	red-tailed hawk
Cathartidae	
Cathartes aura	turkey vulture
Falconidae – Falcons	
Falco sparverius	American kestrel
Odontophoridae- Quails and Bobwhite	
Callipepla californica	California quail
Columbidae - Pigeons and Doves	
Zenaida macroura	mourning dove

Appendix B (cont.)
ANIMAL SPECIES OBSERVED
WITHIN CARLSBAD RACEWAY OPEN SPACE

SCIENTIFIC NAME †	**COMMON NAME**
VERTEBRATES (cont.)	
Birds (cont.)	
Trochilidae – Hummingbirds	
Calypte anna	Anna's hummingbird
Calypte costae	Costa's hummingbird
Picidae - Woodpeckers	
Picoides nuttallii	Nuttall's woodpecker
Tyrannidae - Tyrant Flycatchers	
Myiarchus cinerascens	ash-throated flycatcher
Sayornis nigricans	black phoebe
Tyrannus verticalis	western kingbird
Tyrannus vociferans	Cassin's kingbird
Corvidae - Jays, Crows, and Magpies	
Corvus brachyrhynchos	American crow
Corvus corax	common raven
Aphelocoma californica	western scrub-jay
Hirundinidae – Swallows	
Petrochelidon pyrrhonota	cliff swallow
Aegithalidae - Bushtit	
Psaltriparus minimus	bushtit
Sylviidae – Gnatcatchers	
Polioptila californica californica†	coastal California gnatcatcher
Timaliidae - Wrentits	
Chamaea fasciata	wrentit
Troglodytidae - Wrens	
Troglodytes aedon	house wren
Mimidae - Mockingbirds and Thrashers	
Mimus polyglottos	northern mockingbird
Toxostoma redivivum	California thrasher

Appendix B (cont.)
ANIMAL SPECIES OBSERVED
WITHIN CARLSBAD RACEWAY OPEN SPACE

SCIENTIFIC NAME †	**COMMON NAME**	
VERTEBRATES (cont.)		
Birds (cont.)		
Parulidae - Wood-warblers		
Geothlypis trichas	common yellowthroat	
Icteria virens†	yellow-breasted chat	
Emberizidae - American Sparrows, Towhees, Buntings, Junco, and Relatives		
Melospiza melodia	song sparrow	
Pipilo crissalis	California towhee	
Pipilo maculatus	spotted towhee	
Zonotrichia leucophrys	white-crowned sparrow	
Passeridae - Sparrows and relatives		
Passer domesticus	house sparrow	
Icteridae – Blackbirds, Meadowlark, Orioles, Cowbirds, Grackles, and Bobolink		
Agelaius phoeniceus	red-winged blackbird	
Fringillidae - Finches and Relatives		
Carpodacus mexicanus	house finch	
Carduelis psaltria	lesser goldfinch	
Mammals		
Leporidae - Rabbits and Hares		
Sylvilagus audubonii	desert cottontail	
Canidae - Foxes, Wolves, and Relatives		
Canis latrans	coyote	(track)
Canis lupus familiaris	domestic dog	
Felidae - Cats		
Lynx rufus	bobcat	
Procyonidae – Raccoons and Ringtails		
Procyon lotor	common raccoon	(track)
Sciuridae – Squirrels		
Spermophilus beecheyi	California ground squirrel	
Equidae – Horses		
Equus ferus	horse	

† Sensitive species